

## SolarBee® Lake Circulators- Unique Features & Configurations

The SolarBee® is a floating reservoir mixer/circulator that can achieve targeted, high-volume and long distance circulation completely on solar-power. Solarbees are manufactured by Ixom Watercare at our Dickinson, North Dakota facility and incorporate many unique features. The following are some of the most important for successful use in fresh water reservoirs and are not found with other circulation technologies.

### Horizontal Flow Plate & Adjustable Intakes

The ability to accurately choose and adjust the water column circulation zone is critical for successful outcomes. The SolarBee® has patented intake features that can be set as needed to meet particular objectives.

#### Horizontal Flow Plate

The horizontal flow plate directs water into the intake in a 1-foot thick layer. This ensures water is only pumped from the desired depth in a horizontal plane and not from undesired depths below.

#### Top Water Epilimnetic Circulation Configuration

*Adjustable intake depth of 4 to 13 feet.*

This intake configuration circulates the upper part of the water column from the surface to the thermocline or point of significant temperature stratification.

- Prevents and controls cyanobacteria blooms
- Reduces taste and odor problems (MIB/geosmin)
- More uniform dissolved oxygen (DO) and pH levels throughout the circulation zone.
- Reduces filamentous algae and invasive aquatic weeds.

#### Deep Water Hypolimnetic Withdrawal Configuration

*Adjustable intake depth of 15 to 60+ feet*

This intake configuration pulls water from the deeper areas of the reservoir below the thermocline exposing oxygen-depleted bottom waters to oxygen-rich top waters and the atmosphere.

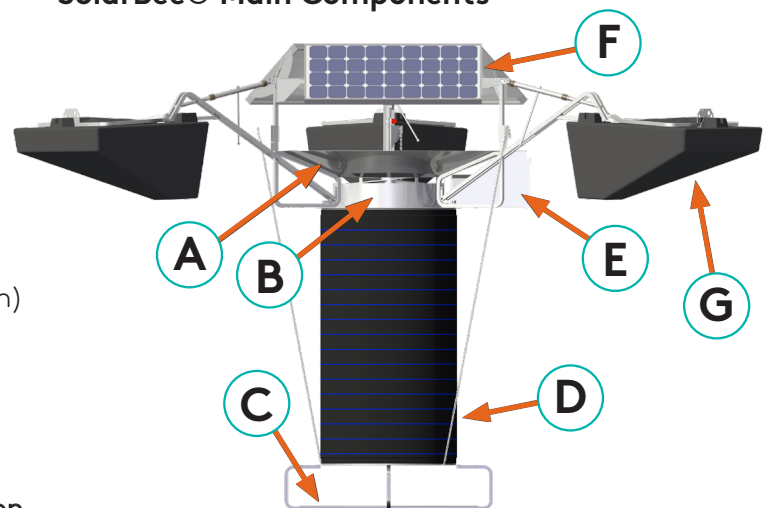
- Oxidizes manganese (Mn) & iron (Fe).
- Helps to prevent fish kills.
- Continuously de-gasses H<sub>2</sub>S.
- Reduces methyl-mercury (Hg).

### Non-Turbulent Flow & Long Distance Distribution

In order to create a large area of influence up to 35 acres per circulator for top water epilimnetic applications, flow and distribution must be non-turbulent and controlled.

Under full power conditions, the SolarBee® axial flow impeller is set to maintain flow through the intake hose at approximately one foot per second. Once the inflow water is near the surface, the distribution dish directs the flow radially 360 degrees in an efficient near-laminar fashion.

### SolarBee® Main Components



- A.** Distribution Dish
- B.** Impeller Housing
- C.** Horizontal Flow Plate/Intake Structure
- D.** Adjustable Intake Hose
- E.** Battery Housing
- F.** Solar Panels/Motor Housing/Controller
- G.** Flotation

Access more information at  
[www.ixomwatercare.com](http://www.ixomwatercare.com)

## SolarBee® Lake Circulator Intake Configurations

